



Industry Update

April 30, 2008

HPDL Faced Wood Doors vs. Melamine-Faced Doors

- High-pressure decorative laminate (HPDL) used on premium grade architectural wood doors is .049” thickness to meet industry quality standards. HPDL is comprised of several layers of phenolic resin-impregnated kraft paper and high-grade decorative print paper that is compressed under high pressure and heat for an extended period of time (approximately 1400 psi @ 280 degrees F for 54 minutes). The bottom layer of kraft paper is sanded to provide a proper adhesion between the laminate and a substrate material

- Melamine is a single thin sheet of decorative print paper that is saturated with melamine resin and compressed under low pressure and heat for a short period of time (approximately 600 psi @ 392 degrees F for 20 seconds) and does not meet all NEMA HPDL standards.

❖ Key selling features of HPDL include:

- **Superior Performance & Durability**
 - State-of-the-art technologies in HPDL and door production, making HPDL doors more beautiful, durable and realistic than ever.
 - HPDL meets or exceeds the standard requirements in the most critical performance properties:
 - Wear Resistance
 - Ball Impact
 - Glass Scratch
 - Mar Resistance

- **Superior Selection**
 - Formica® brand HPDL available in over 250 colors, for any interior decorative design environment imaginable; exotic wood species, painted wood looks, vibrant solid and optical colors, bold patterns, interesting textures and many unique Formica® finishes.
 - Formica® brand HPDL offers visual consistency and uniform design.

NEMA LD 3-2005	Standards	HPDL¹	Melamine²
3.8 Ball Impact Resistance Scope: This test measures the ability of HPDL to resist fractures due to impact by a polished stainless steel ball, weighing 224 +/- 3 grams.	50'' minimum	58 – 66'' (Exceptional Impact Performance)	15''
3.13 Wear Resistance Scope: This test measures the ability of the surface of HPDL to resist abrasive wear-through of the decorative layer.	400 cycles minimum	700 – 1000 cycles solids / woodgrains / patterns (Exceptional Wear Performance)	400 – 500 cycles solids 125 – 150 cycles patterns / woodgrains
AWI 8th EDITION, Section 1300 and WDMA I.S. 1-A Quality Standards	Face Material	Recognized as quality material	Does not meet minimum standard

- ^{1.} Results reported by North Carolina State University Wood Products Laboratory
^{2.} Results reported by Formica Corporation's Product/Physical Testing Laboratory

	Test Method	Standard	HPDL	LPDL
3.5	Boiling Water (Tea Pot)	No Effect	No Effect	Extreme Effect
3.7	Glass Scratch	50-100 (min)	100-150	50 - 100
3.8	Ball Impact	50'' (min)	58''	12'' & 14''
3.13	Taber Wear Resistance	400 cycles (min)	>400	200
CF 295	Mar Resistance	< 20 (min)	6.7	16.0

- **HPDL tested superior to LPDL in almost every instance.**
- **Tested according to NEMA Methods LD 3-2005, CF Methods (Company of Formica Standards methods) and reported by the Formica Product/Physical Testing Laboratory.**

Glossary of Terms

HPDL	High Pressure Decorative Laminate consists of layers of phenolic resin-impregnated kraft paper and high-grade decorative paper that is compressed under high pressure and heat for an extended period of time.
Melamine	A single thin sheet of decorative paper that is saturated with melamine resin and compressed under low pressure and heat for a short period of time.
Face Material	Decorative surfacing material often applied to wood product substrates.
NEMA	National Electrical Manufacturers Association. The laminate quality standards guide.
AWI	Architectural Woodwork Institute. Standards for Woodworkers, suppliers, etc.
WDMA	Windows & Door Manufacturers Association. Trade Organization for Windows and Door Manufacturers.
Ball Impact	Measures the ability of laminate to resist fractures due to impact caused by a polished stainless steel ball weighing 224+/- 3 grams.
Wear Resistance	Measures the ability of the surface of a decorative laminate to resist abrasive wear-through of the decorative layer.
Glass Scratch Resistance	Measures the ability of laminate to resist scratching by a material of similar sharpness and hardness to silica.
Boiling Water Resistance	Measures the ability of the surface of laminate to maintain its color and surface finish when subjected to boiling water.
Mar Resistance	The ability of laminate to resist marring under controlled conditions, using an abrasive cloth, which show a measurable gloss difference.

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